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SECRETARY OF THE AIR FORCE**

**AIR FORCE INSTRUCTION 11-2E-8,  
VOLUME 3**



**8 DECEMBER 2009**

***Flying Operations***

***E-8 OPERATIONS PROCEDURES***

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This volume implements policy guidance in AFD 11-2, *Aircraft Rules and Procedures*; AFD 11-4, *Aviation Service*; and AFI 11-202V3, *General Flight Rules*. It provides the basis for worldwide employment of the E-8 Joint Surveillance Target Attack Radar System. This publication applies to the Air National Guard (ANG). All aircrews will follow this volume which prescribes standard operating procedures and restrictions. Complementary references are included. Commanders must ensure that individuals are fully qualified according to all applicable directives prior to being used as combat mission ready/basic mission capable crewmembers. Commanders will provide aircrews with the necessary planning factors to ensure mission accomplishment. Flying safety will not be compromised. Issue this volume to E-8 aircrew members in accordance with local procedures. Major Commands (MAJCOMs), Direct Reporting Units (DRUs), and Field Operating Agencies (FOAs) will forward proposed supplements to this volume to Headquarters (HQ) USAF/A3O-AT through HQ Air Combat Command (ACC)/A3YA for approval prior to publication in accordance with AFD 11-2. Copies of MAJCOM/DRU/FOA-level supplements, after approved and published, will be provided by the issuing MAJCOM/DRU/FOA to HQ USAF/A3O-AT, HQ ACC/A3YA, and the user MAJCOM/DRU/FOA offices of primary responsibility. Field units below MAJCOM/DRU/FOA level will forward copies of their supplements to this publication to their parent MAJCOM/DRU/FOA office of primary responsibility for post publication review. **Note:** The terms direct reporting unit (DRU) and field operating agency (FOA), as used in this paragraph, refer only to those units that report directly to HQ USAF. Maintain official records created as a result of prescribed processes IAW AFMAN 33-363, *Management of Records*, and dispose of records IAW the AF Records Disposition Schedule (RDS) located at the AF Records Information Management System link on the AF Portal. Contact supporting record managers as required.

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The Paperwork Reduction Act of 1974 as amended in 1996 and the Air Force Forms Management Program IAW AFI 33-360 affect this volume.

Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with AFMAN 33-363, *Management of Records*, and disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located at <https://www.my.af.mil/gcss-af61a/afrims/afrims> .

Submit recommendations for change to this volume on an AF Form 847, *Recommendation for Change of Publication*, through channels, to HQ ACC/A3YA. HQ USAF/A3/A5 will approve all changes to this instruction, except as specified herein, unless an aircraft emergency or operational necessity dictates exception.

## ***SUMMARY OF CHANGES***

This volume was completely revised and should be reviewed in its entirety. In **Chapter 2** the bulk of the Mission Planning specifics have been moved to AFI 11-2E-8, V3, 116 ACW SUP 1. In **Chapter 3**- Position titles- NAV/DSO to NAV, SMO to SO and AMSS to ART have been changed. These areas were added: 3.2.2.1.- Solo ART Ops, 3.4.- Transportation of Passengers (PAX) and 3.9.- Portable Electronic Devices (including 3.9.2. Cell Phone Usage). In **Chapter 4**; the icing section is significantly more detailed. The Take-Off and Landing Data section expanded adding 4.2.5.2.- Mission Accomplishment Method for Obstacle Clearance but moves *Reduced Thrust Take-Offs* to Chapter 6. The following areas were added: 4.2.9.4.- Maximum crosswind for touch-and-go 4.2.10.- Departures, 4.2.12.- Maximum Landing Gross Weight Landing and 4.2.13.1.- All normal full stop landings will be planned to not exceed the normal brake energy or landing distance limits was added. The following emergency procedures were changed: 4.3.2.- In-flight Engine Failure, 4.3.4.- Flight crew simulated emergency procedures should not be used synonymously with the simulated emergency drills accomplished by the mission crew. 4.3.5.- Prohibited Simulated Emergencies (4.3.5.1.- Engine failure takeoff continued below 200AGL. and 4.3.5.5.- Practice approach to stall recovery were added while *Engine failure takeoff continued on the runway* was removed from the prohibited section.)

4.21.14.- Reduced Vertical Separation Minimum (RVSM) Airspace was changed to read “All E-8’s are approved for unrestricted use in the full RVSM envelope”. In **Chapter 5**; Para 5.2.- Changed *Sensor Management Officer (SMO)* to Sensor Officer (SO), *Senior Director Technician (SDT)* to Senior Surveillance Manager (SSM) and *Airborne Mission System Specialist (AMSS)* to Airborne Radar Technician (ART). **Chapter 7** was changed from “*AIRCRAFT SECURITY*” to “*CHEMICAL, BIOLOGICAL, RADIOLOGICAL, NUCLEAR, AND HIGH YIELD EXPLOSIVE (CBRNE) OPERATIONS*” and moved to Chapter 6. “*Attachment 2: SAMPLE MISSION SUMMARY BRIEFING GUIDE*” was removed. The new “Attachment 2- E-8 PASSENGER BRIEFING GUIDE” was changed to bring it in-line with the AFI 11-2E-8, Vol 3 and AFI 11-202 Vol 3. Additional changes were incorporated and require the user to review their specific area.

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## Chapter 1

### INTRODUCTION

**1.1. Scope.** In conjunction with other governing directives, this instruction prescribes procedures for operating the E-8C under most circumstances. It is not a substitute for sound judgment or common sense. Operations or procedures not specifically addressed may be accomplished if they enhance safe and or effective mission accomplishment.

**1.2. Deviations.** Deviations from these procedures require specific approval of the MAJCOM/A3 unless an urgent requirement or an aircraft emergency dictates otherwise. In that case, the pilot in command (PIC) will take appropriate action to safely recover the aircraft and notify the appropriate C2 agency, time and conditions permitting.

**1.3. Waivers.** Unless specifically noted otherwise in the appropriate section, waiver authority for requirements of this instruction is HQ ACC/A3. Submit waiver requests through channels to NGB/A3 and HQ ACC/A3Y.

**1.4. Local Supplement Coordination Process.** The 116 WG/OG will define additional local operating procedures to this instruction in a unit supplement. The procedures will not duplicate, alter, amend, or be less restrictive than the provisions of this basic AFI and/or flight manual publications. OG/CCs will forward one copy for validation to HQ ACC/A3YA, and if applicable through 8 AF prior to releasing their supplement.

**1.5. Abbreviations, Acronyms, and Terms.** See [Attachment 1](#).

## Chapter 2

### MISSION PLANNING

**2.1. Mission Development/Planning.** The Squadron Director of Operations (DO) or Deployed Commander (DETCO), if applicable, will actively direct the execution of the units flying schedule. The DETCO may delegate authority to the Deployed Director of Operations (DETDO). The aforementioned will ensure that all operations personnel provide crews with the requisite support to plan and execute mission. They will ensure crews/mission planners have no barriers to mission planning and ensure that every mission is thoroughly planned, briefed, executed, and debriefed. The responsibility for mission planning is shared between the aircraft and mission crew commanders or designated Mission Planning Cell (MPC). Together they will ensure the JSTARS flight profile is adequately planned and the crew is properly prepared for mission tasking and execution.

2.1.1. Scheduling. Peacetime execution of the squadron's flying schedule shall focus on accomplishment of AFI 11-2E-8 Volume 1, *E-8 Aircrew Training*, currency, Ready Aircrew Program (RAP) requirements and AFI 11-2E-8 Volume 2, Aircrew Evaluation Criteria.

2.1.2. Mission Planning, Briefing and Debriefing. Mission planning will be defined in AFI 11-2E-8 V3, 116 ACW SUP 1. Briefings and debriefing guides can be found in the unit supplement. Items briefed IAW AFI 11-2E-8 V3, 116 ACW SUP 1, the applicable technical order, and mission standards may be briefed as "standard" except on Combat Training Squadron (CTS) Programmed Flying Training (PFT) sorties.

2.1.3. The Aircraft Commander (AC) will ensure the JSTARS flight profile is adequately planned and all flight and crew safety factors are considered. The Mission Crew Commander (MCC) will ensure the mission crew has the proper materials and is properly prepared for mission tasking and execution.

## Chapter 3

### AIRCREW OPERATING PROCEDURES

**3.1. General.** A Pilot in Command (PIC) is designated for all flights on the flight authorization. PICs are:

3.1.1. Responsible for the safe accomplishment of the flight.

3.1.2. Final authority for requesting or accepting any waivers affecting the flight.

3.1.3. Command and Control Procedures.

3.1.3.1. Responsibilities. The AC or designee will provide mission reports to the controlling C2 agency unless other guidance is directed in the OPOD or Special Instructions (SPINS).

3.1.3.2. All deployment/redeployment sorties will provide status of air refueling updates to the home station C2 agency as soon as possible following each event.

### **3.2. Minimum Crew Manning.**

3.2.1. Minimum flight crew is specified as a qualified AC, Co-Pilot (CP), and Flight Engineer (FE). An Instructor Pilot (IP) with an Unqualified Pilot (UP), enrolled in a formal course of training, satisfies the two-pilot requirement.

3.2.2. Mission Systems In-flight. The minimum crew required to initialize and operate the mission system is a Navigator (NAV), MCC, Sensor Officer (SO), 2x Airborne RADAR Technicians (ART) and 2x Communications System Technicians (CST).

3.2.2.1. Solo ART Operations. On a case-by-case basis squadron commanders may authorize solo ART operations at their discretion provided all the following conditions are met:

3.2.2.1.1. ART is instructor qualified.

3.2.2.1.2. No more than a 1:3 ratio (33%) of solo ART crews OCONUS at time.

3.2.2.2. The OG/CC is the waiver authority for minimum crew manning requirements not previously addressed.

### **3.3. Aircrew Duty Period and Augmentation.**

3.3.1. Aircrew duty period is IAW AFI 11-202 Volume 3, Flying Operations and applicable MAJCOM Supplement. With any axis of the autopilot inoperative, limit the aircrew duty period to 12 hours and the augmented aircrew duty period to 16 hours.

3.3.1.1. An augmented flight crew will consist of a qualified AC, navigator, and flight engineer in addition to the normal flight crew. Addition of flight crewmembers after the first takeoff in a crew duty period is not considered augmentation.

3.3.1.2. The operations group commander can change the augmented mission crew composition depending upon mission requirements Crew rest, flight duty period, and extensions will be IAW AFI 11-202V3 and applicable MAJCOM Supplement. Due to the long flights and numerous time zone changes involved in flying to and from overseas

locations, ground time between landing and subsequent takeoff will not be planned for less than 18 hours, unless waived by OG/CC or equivalent. This ground time does not apply to "Op Stops" made within an aircrew duty period.

**3.4. Transportation of Passengers (PAX).** The AC is responsible for safe transportation and briefing of PAX and Mission Essential Personnel (MEPs) IAW AFI 11-202V3, 11-401, Aviation Management and MAJCOM Supplements using the Passenger Briefing Guide see [Attachment 2](#). The AC can delegate the PAX and MEP briefing to any qualified crewmember.

3.4.1. Crews will ensure PAX do not operate mission equipment. This does not apply to Professionally Qualified Civilian Employees or civilian contractors performing maintenance or operations IAW their contract requirements. PAX with appropriate clearances may observe mission activity on a non-interference basis if approved by the unit commander and the PIC.

3.4.2. Transporting PAX with firearms will be conducted IAW AFI 31-207, *Arming and Use of Force by Air Force Personnel*, and DoD 5210.56.

### **3.5. Handling of Classified Cargo.**

3.5.1. Receipts will be obtained for classified cargo. A DD Form 1387-2, *Special Handling Data Certification*, is required for sensitive/classified cargo.

3.5.1.1. Agencies coordinating with the aircraft commander are authorized to designate officer or enlisted, (E-5 and above) crewmembers on military aircraft as couriers to escort and safeguard courier material when other qualified personnel are not available. Qualified PAX, if carried, are designated prior to designating crewmembers. The following restrictions apply:

3.5.1.1.1. Flight deck crewmembers will not be designated without the consent of the AC.

3.5.1.1.2. Crewmembers should not be designated as couriers on aircraft scheduled to stop at locations that lack adequate classified storage facilities. 3.5.1.1.3. During scheduled or unscheduled RONS, crewmembers may place classified material in temporary custody of the following agencies listed in descending order of priority: (1) US Military classified storage facility; (2) US military guards; (3) US DoD civilian guards. Crewmembers will receive a hand-receipt for all classified material placed in temporary custody.

3.5.2. If unable to follow the itinerary to the destination of the classified material, or if material is lost, stolen, or otherwise compromised, report circumstances to the nearest US military installation or US government activity.

3.5.3. Crewmembers will not introduce any removable media into any media drive on the aircraft unless approved by the OG/CC or his designated representative. Only the ART is authorized to copy files to the copy man disks located on the jet which can then be retrieved from CSS for official use only (FOUO). The ART can request additional removable media for the mission via the appropriate software request form as the mission requirements dictate. This does not prohibit the use of the ATO/ACO updates via removable media or copying of End of Mission Reports to a designated medium OCONUS. The ART will ensure positive control and accountability of removable media until returned to the CSS.

**3.6. Cargo Documentation.** Proper cargo documentation must accompany each cargo load. An OG/CC approved cargo manifest is required prior to all departures with cargo aboard. If a computerized cargo manifest is not available, a cargo listing will accompany the load. The cargo or mail listing may be an abbreviated manifest, but will contain all required MILSTAMP data and information for weight and balance purposes. A Shipper's Declaration for Dangerous Goods is required for hazardous cargo. A DD Form 1387-2, is required for signature service cargo. The following information should normally be obtained before shipping cargo. The final authority on the acceptance of any cargo is the AC.

3.6.1. Nomenclature of item. Give military or civilian name, national stock number (NSN), and a brief description of the item to be shipped.

3.6.2. Dimensions (in inches): Length, width, and height.

3.6.3. Gross Weight (in pounds).

3.6.4. Agency/Office responsible for loading the aircraft.

3.6.5. Aircraft Configuration Required.

3.6.6. Preparation of Cargo for Loading.

3.6.7. Loading Procedures.

3.6.8. Tie Down Points.

3.6.9. Off-loading Procedures.

3.6.10. Comments.

### **3.7. Aircrew Flight Equipment.**

3.7.1. Designated life preservers will be readily available during all overwater flights unless within glide distance to land as defined by T.O. 1E-8C-1-1, *Maximum Range Glide*.

3.7.2. The MCC will inventory and sign the AFTO Form 46, *Prepositioned Life Support Equipment*, for all flights with mission crew members. The PIC or designee will sign the form when mission crew is not on board.

3.7.3. MA-1 Portable Oxygen: During preflight, mission crew will ensure there is an unmodified (fast-fill) MA-1 oxygen bottle attached to each fire fighter smoke mask and each real world bottle team and runner position. Unmodified MA-1 oxygen bottles should be prioritized respectively. Missions will not be delayed or canceled if a sufficient number of unmodified MA-1 oxygen bottles are unavailable.

3.7.3.1. The E-8C is equipped with 25 MA-1 oxygen bottles. If the aircraft has optional crew rest seats, the oxygen bottle from the galley should be moved and placed under the aft aisle seat. Only 25 portable oxygen bottles need be installed on the aircraft, with or without the optional crew rest seats.

3.7.3.2. All portable oxygen bottles may be moved from their original position provided the bottles are returned to their positions as depicted in the T.O. prior to returning the aircraft to maintenance.

3.7.4. Emergency Personal Oxygen System (EPOS). EPOS kits provide a tertiary source of oxygen in the event that system oxygen and MA-1 portable oxygen are not available during

an actual emergency requiring the use of supplemental oxygen. Each kit contains 16 EPOS units.

3.7.4.1. Sorties with more than 30 personnel require an EPOS kit on board.

3.7.4.2. Prior to flight, MCCs will ensure an EPOS is readily available for aircrew members that do not have immediate access to system oxygen or MA-1 portable oxygen bottles.

3.7.4.3. EPOS will not be used during simulated emergencies drills.

**3.8. Critical Phases of Flight.** Critical phases of flight are defined as takeoff, air refueling, approach, landing, emergencies and flight below 5000 feet AGL. Only aircrew performing emergency duties are authorized to stand during critical phases of flight. Instructor Navs are authorized to stand during air refueling operations up to pre-contact.

**3.9. Portable Electronic Devices.** The use of portable electronic devices will be IAW AFI 11-202V3. Do not connect unauthorized equipment (laptop computers, video equipment, food preparation equipment, radios/tape players, CD players, etc.) to the aircraft intercom, PA or radio systems. Portable electronic devices may be connected to the aircraft electrical system through a compatible (i.e. 60 Hz) outlet.

3.9.1. Only authorized government issued computers and video replay equipment are authorized for use in the cockpit.

3.9.2. Cell Phone Usage. All cell phones and similar electronic devices carried by aircrew will be turned off and stowed inside a closed flight bag or zipped pocket while on the flight line or onboard the aircraft IAW AFI 11-202V3 ACCSUP 1. The AC/MCC may designate/authorize a crewmember to use a cell phone for mission critical issues.

3.9.3. Cell Phone Hazards. Cell phones will not be on within the distances listed below:

3.9.3.1. Within 50 feet of pressurized aircraft fuel or oxygen servicing equipment.

3.9.3.2. Within 25 feet of any aircraft fuel vent outlet during fuel transfer.

3.9.3.3. Within 10 feet of any aircraft fuel vent outlet.

### **3.10. Alert Procedures.**

3.10.1. Alert procedures will be initiated by OG/CC, or higher, when mission tasking requires a quick response to HHQ taskings.

3.10.2. ALPHA Alert. Aircrew is capable of launching in one (1) hour of crew notification of launch order. Crews should be quartered near the alert aircraft with sufficient transportation to get them to the aircraft in minimum time. A crew will not stay on ALPHA alert duty for more than 48 hours. After 48 hours, the crew must be launched, released, or entered into pre-departure crew rest. Crew duty day begins when the crew is notified of the launch order.

3.10.3. BRAVO Alert. Aircrew is capable of launching in four (4) hours of crew notification of launch order. Crewmembers are given 12-hours of pre-alert crew rest. After crew rest they are placed on telephone standby. A crew will not stay on BRAVO alert duty for more than 48 hours. After 48 hours, the crew must be launched, released, or entered into pre-departure crew rest. Crew duty day begins when the crew is alerted for duty.

3.10.4. Aircraft Alert Procedures. Aircraft will be prepared for alert launch IAW T.O. 1E-8C-1, *Flight Manual*, USAF Series Aircraft, E-8C, and unit supplement.

## Chapter 4

### FLIGHT CREW OPERATING PROCEDURES

**4.1. General.** This chapter contains operating procedures applicable to the flight crew. This information is in addition to AFI 11-202V3, AFI 11-401, and applicable MAJCOM supplements.

4.1.1. Icing Conditions. Takeoff is prohibited when frost, ice, snow or slush is adhering to the wings, control surfaces, engine inlets, or other critical surfaces of the aircraft. Coatings of frost up to 1/8 inch thick on the lower wing surface, below the fuel tank area are permissible provided it is caused by cold soaked fuel. Cold soak fuel conditions can occur when an aircraft lands after having been subjected to extremely cold temperatures at altitude. Wing fuel may become super-cooled and will maintain skin temperature at or below freezing after landing even in relatively high ambient ground temperatures, causing frost to form on the aircraft skin. Thin coatings of frost on the fuselage are permitted provided letters and paint lines are visible through the frost. When in a situation requiring de-ice and anti-ice procedures, pilots will refer to this instruction and OGV for guidance and holdover tables.

4.1.1.1. Critical Aircraft surfaces. Critical aircraft surfaces must be clear of adhering frozen contamination before beginning takeoff roll. Critical aircraft surfaces include but may not be limited to:

4.1.1.1.1. Wings, slats, flaps, ailerons, spoilers.

4.1.1.1.2. Horizontal stabilizer, elevator, vertical stabilizer, rudder.

4.1.1.1.3. Pitot heads, static ports, ram-air intakes, engine flight instrument probes.

4.1.1.1.4. Engine and APU inlets and exhausts, landing gear, gear doors.

4.1.1.1.5. Radome, fuel vents

4.1.1.2. PIC responsibility. The Pilot in Command has the ultimate responsibility for ensuring the aircraft is free of frozen contamination and that the flight can be operated safely. De-icing/Anti-icing will be accomplished IAW aircraft technical manuals, operational guidance, checklists and policies as specified by the unit OG. OGV will annually review and ensure current and standardized guidance, checklists, holdover tables, policies and procedures for de-icing/anti-ice procedures for the E-8C.

4.1.1.3. De-icing is the procedure of removing frost, ice, slush, or snow from the aircraft in order to provide clean surfaces. On the ground this may be accomplished by any mechanical or pneumatic means that will not damage the aircraft or by using heated de-icing fluid to remove all forms of frozen contamination from critical aircraft surfaces.

4.1.1.4. Anti-Icing is a precautionary measure that provides temporary protections against the formation of frost or ice and accumulation of snow or slush on treated surfaces of the aircraft for a limited amount of time (holdover time). Holdover time is calculated by the pilot after Anti-Ice fluid application and is an estimated time the applied fluid will prevent the formation of frozen contaminants on the treated surfaces of the aircraft. Anti-icing fluid is the only protection against airfoil icing prior to becoming airborne. Consequently, anti-icing fluid application should be completed as close to takeoff time as possible.

4.1.1.4.1. Anti-Ice Fluid Limitations. All De/Anti-icing fluids have limits to their operational temperature use. Approximate temperature limits for Type I fluid is -30C, Type II and Type IV limit is approximately -25C and Type III temperature limit is approx -29C. De/Anti-icing can be performed using a one or two step procedure.

4.1.1.4.1.1. One step–De-ice and Anti-ice performed at same time with same fluid. Careful attention to the Type of fluid used is critical in determining holdover times since holdover time commences with fluid application. This procedure can be used to minimize time required to complete the De/Anti-Ice operation.

4.1.1.4.1.2. Two Step – Two distinct fluid applications. First step is a De-ice step with heated fluid followed by an anti-icing fluid – usually Type II or IV but Type III may also be used.

4.1.1.4.2. Anti-Ice Fluid Properties: Type 1 de-icing fluid is orange-colored to colorless in appearance. Type-I fluid must be mixed with water to ensure proper aerodynamic flow off characteristics and should never be applied at 100% concentration. Always conduct de-icing with an acceptable Type I fluid mixture. Acceptable Type I fluid mixtures are defined as; heated water - when OAT is at or above -3C (27F), heated water mixed with Type I, Type II, or Type III fluids, and heated water mixed with Type I fluid.

4.1.1.4.2.1. Type I fluids are de-icing fluids and have no holdover times. If freezing rain, freezing fog, steady snow, rain or frost is accumulating on the aircraft after a Type I fluid application, the crew will not take off unless an Anti-Ice fluid (Type II, III, or IV) fluid has been applied and the associated holdover time has not expired OR the aircraft is de-iced again after the phenomena has ceased.

4.1.1.4.2.2. Anti-Icing: Type II, Type III and Type IV are de-icing and anti-icing fluids are of high viscosity and are considered to be thickened fluids. Type II can be straw-colored to colorless in appearance while Type III is bright yellow. Type IV fluid is green colored except in Japan, where it is colorless. Varying concentrations of these fluids affect holdover times and pilots must carefully assess both the concentrations AND the fluid type to ensure that correct holdover table are used along with the correct concentrations before calculating holdover time.

4.1.1.4.2.3. The AC must ensure the specification of de-ice/anti-ice fluids being used on the E-8C in calculating holdover times. Holdover times begin when fluid is first applied.

4.1.1.4.2.4. If de-ice or anti-ice procedures are needed the AC/MCC will coordinate new crew show/step times if required with the Ops Super. The AC will ensure that applicable crewmembers and ground personnel coordinate de-icing activities IAW T.O. 1-E-8C-1. After de-icing only procedures and prior to takeoff, the AC/FE will perform a visual inspection of the critical aircraft surfaces.

4.1.1.4.2.5. If any frozen precipitation (frost, snow, ice, or slush) is evident on the

aircraft, takeoff is not authorized until the aircraft has been de-iced again and the crew can comply with AFI 11-202V3 and MAJCOM guidance regarding flight in frozen precipitation. EXCEPTION: The T.O. 1E-8C-1 allows a thin layer of hoarfrost on the fuselage.

4.1.1.4.2.6. Snow Removal: Loose, dry snow is best removed by a Hot Air Blast System (HABS). Wet snow may be removed with Type I, II, or IV fluid. Use of ropes and brooms is not desired and should only be used as a last resort.

4.1.1.5. Icing Restrictions. Takeoff is prohibited when frost, ice, snow or slush is adhering to the wings, control surfaces, engine inlets, or other critical surfaces of the aircraft. Critical aircraft surfaces must be clear of adhering frozen contamination before beginning takeoff roll.

4.1.1.5.1. Takeoff in icing conditions beyond holdover times is prohibited. Holdover time begins when fluid is first applied to the aircraft. If holdover time is exceeded and a form of frozen phenomena is accumulating on the aircraft, a Type I fluid should be used to de-ice the aircraft and a Type II, III or IV fluid re-applied to establish a new holdover time.

4.1.1.5.2. Do not takeoff during hail, moderate or heavy freezing rain, snow pellets or ice pellets regardless of De/Anti-ice fluid applications.

4.1.1.5.3. Flight in reported severe icing conditions prohibited. Flight through forecast moderate or greater icing conditions will be minimized. When icing conditions are encountered, take immediate action to exit the icing conditions. Under no circumstance is sustained flight in moderate or greater icing conditions authorized.

4.1.2. Turbulence Restrictions. Do not fly in areas of forecast or reported severe turbulence. Every effort will be made to avoid areas of reported moderate turbulence. If moderate turbulence is forecast along planned route of flight, the AC should determine the best altitude to avoid the moderate turbulence. If moderate or severe turbulence is encountered, the AC will exit the conditions using the most expeditious method possible.

4.1.3. Thunderstorm Avoidance. Pilots will neither file a flight plan route nor fly into an area of known or forecast thunderstorm activity when the weather radar is inoperative or unusable and thunderstorm activity cannot be visually circumnavigated IAW AFI11-202V3 criteria.

4.1.4. Temperature Correction. Aircrews performing approaches and landings at locations where temperatures are 0 degrees centigrade or below will refer to the Flight Information Handbook, section D, Temperature Correction Chart, to establish a corrected Height Above Aerodrome (HAA), Height Above Touchdown (HAT), and Minimum Decent Altitude (MDA) as appropriate.

## **4.2. Pavement, Takeoff and Landing.**

4.2.1. Pavement. Runway/taxiway length and width limitations are defined by AFI11-202V3, ACC Supp. Crews will reference the Instrument Flight Rules (IFR) Supp, Airfield Suitability and Restriction Report (ASRR) and the T.O. 1E-8C-1-1, *Flight Manual, USAF Series Performance Data, E-8C Aircraft* to determine the ability of the E-8C to land/taxi at an airfield based on planned operating weights.

4.2.2. Runway Length for Takeoff. Takeoffs will be initiated from the beginning of the approved usable portion of the runway. Minimum runway length for takeoff is critical field length.

4.2.3. Use of Overruns. If approach end overruns are available, stressed and authorized for normal operations, they may be used to increase the runway available for takeoff. Departure end overruns (if stressed and authorized) may also be used for landing if needed.

4.2.4. Rolling Takeoffs. Should be made whenever critical field length permits and IAW T.O. 1E-8C-1 and the T.O. 1E-8-C-1-1. Aircraft will normally takeoff and land on the longest suitable runway.

4.2.5. Takeoff and Landing Data. All takeoff and landing data will be computed by the FE IAW T.O. 1E-8C-1-1. The AC, CP, or an additional FE will check the takeoff and emergency return data. Computerized Flight Planning Software and other programs approved by the OG/CC are approved for computing Takeoff and Landing Data (TOLD).

4.2.5.1. Use of Mission Accomplishment Method for calculating TOLD. Mission accomplishment is defined as using the benefits of headwind and slope to accomplish a takeoff and landing. Unless otherwise noted on the applicable chart in T.O. 1E-8C-1-1, crews will not use mission accomplishment methods to accomplish takeoffs or landings without OG/CC or equivalent approval. Operational/contingency operations may use mission accomplishment methods at the AC discretion, if the situation warrants.

4.2.5.2. Mission Accomplishment Method for Obstacle Clearance will only be used IAW T.O. 1E-8C-1-1 and AFMAN 11-217 Volume 1, *Instrument Flight Procedures*.

4.2.6. Takeoff Thrust Setting. All peacetime sorties will use reduced thrust procedures as described in T.O. 1E-8C-1-1. See AFI 11-2E-8, Vol 3, 116 ACW SUP 1 for conditions allowing Takeoff Rated Thrust (TRT) takeoffs.

4.2.7. Tailwind. Takeoffs and landings with a tailwind are not recommended. If operational necessity or Air Traffic Control (ATC) considerations dictate, a tailwind takeoff or landing may be accepted IAW T.O. 1E-8C-1-1.

4.2.8. RCR (Runway Condition Report). Aircraft will not takeoff or land when reported RCR is less than 10. The OG/CC has the authority to waive the minimum RCR to 7 when operational necessity warrants. Some airports may report the average RCR value, in this case the pilot will ask for the minimum RCR recorded on the runway. Aircrews will not conduct ground operations (taxi or towing) with RCR less than 7.

4.2.9. Crosswinds. Unless further restricted by aircraft gross weight or emergency conditions, the following crosswind limits apply unless waived to aircraft limits by OG/CC.

4.2.9.1. Maximum crosswind component (gust included) for takeoff or landing on a dry runway is 25 knots.

4.2.9.2. Takeoff maximum crosswind on a wet runway is 20 knots.

4.2.9.3. Landing maximum crosswind on wet runway is IAW T.O. 1E-8C-1-1.

4.2.9.4. Maximum crosswind for touch-and-go operations is 15 knots for an IP and 10 knots for a touch-and-go qualified AC.

4.2.10. Departures. AFI 11-202V3 permits crews to depart Visual Flight Rules (VFR) and climb to an IFR Minimum En Route Altitude (MEA) or conduct a VFR departure to join an IFR flight plan as a last resort for mission accomplishment.

4.2.10.1. The crew becomes solely responsible for air traffic separation, terrain and obstacle clearance, and maintaining VFR cloud clearances until rejoining their IFR flight plan at the IFR MEA. There is no peacetime mission that requires use of this procedure in lieu of being able to vertically clear all obstacles along the planned departure path with one engine inoperative.

4.2.10.2. This procedure will not be used in lieu of meeting a required climb gradient (i.e. obstacle or ATC) without OG/CC or higher approval. This procedure will not be used as a means to increase fuel loads for missions.

4.2.11. Aircraft Category. The E-8 is a category D aircraft. Some landing configurations and gross weight combinations will require the use of category E minimums. Refer to Flight Information Publication (FLIP) General Planning (GP) for guidance.

4.2.12. Maximum Landing Gross Weight. Landing gross weight will not exceed 247,000 pounds under normal conditions. Landing at gross weights greater than 247,000 pounds during an emergency is at the discretion of the AC. If mission requirements dictate, the OG/CC may authorize landings over 247,000 pounds, provided all other landing requirements can be safely met.

4.2.13. Landings. All landings will be flown so as to touchdown in the designated touchdown zone (1000-2000 feet). If it appears that the actual touchdown will occur beyond the first 1/3 or 3,000 feet (whichever is less) of the landing runway, initiate a go-around.

4.2.13.1. All normal full stop landings will be planned to not exceed the normal brake energy or landing distance limits.

4.2.13.2. When landing on a dry runway, braking may be delayed until runway remaining equals computed landing distance.

4.2.13.3. Multiple Full Stop Landings. The FE will determine the brake energy used during landing and then using the decision speed (V1), without headwind correction, determine the brake energy for an abort during a subsequent takeoff. Do not takeoff until the combined energy after ground cooling is less than 40 million ft-lbs. If takeoff is made with brake energy above 10 million ft-lbs., air-cooling procedures will be followed.

4.2.14. Transition. Transition is defined as any approach or landing other than one to a full stop.

4.2.14.1. Military, Joint Use and Civilian Airfields. IAW AFI 11-202V3 aircrew may conduct transition training at all military, joint use and civil (P) airfields within the continental United States that meet the restrictions found within this publication. Conducting transitions at civilian airfields requires WG/CC or higher approval and advanced permission from the airport manager or designated representative.

4.2.14.2. AC's will ensure transition is planned during ATC hours of operation and in compliance with Notice to Airmen (NOTAMs) and bird restrictions.

4.2.14.3. Flight crews should take bird strike potential into consideration when planning transition.

4.2.14.4. Crews should notify the Supervisor of Flying (SOF) prior to accomplishing unscheduled transition.

4.2.14.5. Seat swaps during transition should be made on the downwind leg of either the IFR or VFR traffic pattern.

4.2.15. Arresting Cables (does not include recessed cables).

4.2.15.1. Do not land on approach end arresting cables. If the aircraft lands before the cable, the crew should contact the tower to have the cable inspected.

4.2.15.2. Do not takeoff or land on a runway with raised arresting gear reported as slack, loose or improperly rigged by NOTAM, Automated Terminal Information Service (ATIS), or ATC.

4.2.16. Airfield Certification. All pilots and staff mission planners will reference the Airfield Qualification and Familiarization Manual as directed by AFI 11-202V3 and the ACC Supplement. In addition, they will review the AMC Airfield Suitability and Restrictions Report (ASRR) and should contact HQ AMC/A36 for updates to airfield operability and weight bearing capability if required. The Airfield Suitability Help Desk (DSN: 779-3112) can answer most airfield questions 24 hours per day, 7 days per week and can be reached via the internet at: <https://private.amc.af.mil/a3/a36a/A3AS/a3as.htm>.

**4.3. Airborne and Simulated Emergencies.** Pilots should notify the SOF or the controlling C2 agency of any emergency or potentially hazardous situation as soon as practical. No crewmember will use the term “emergency” when communicating with external agencies, until specifically authorized by the AC. The AC/IP will accomplish the final approach and landing unless the situation prevents/dictates otherwise. Simulated emergency procedures practice will be terminated. A written record of the emergency situation will be provided to the appropriate safety office as soon as possible.

4.3.1. Fuel Dumping. Fuel dumping will be conducted only to reduce gross weight in an emergency or for operational necessity. When circumstances permit, dump fuel above 5,000 feet AGL over unpopulated areas or in designated fuel dump areas. Avoid circling descents. Advise the appropriate air traffic control agency of intentions, altitude, and location, when beginning fuel dumping and when the operation has been completed. Make the appropriate entry in the AFTO Form 781, *Arms Aircrew/Mission Flight Data Document*.

4.3.2. In-flight Engine Failure. If an engine is shutdown in flight, the mission may be terminated and a landing made as soon as practical. If the mission is continued, crews will notify the appropriate C2 agency.

4.3.3. In-flight Troubleshooting. Aircrews will not conduct in-flight troubleshooting after tech order emergency procedures are completed. Once a malfunctioning system is isolated, that system should not be used again unless essential for safe recovery.

4.3.4. Simulated Emergency Procedures. Simulated emergency procedures are flight deck procedures where the normal configuration of the airplane is altered (i.e., an engine pulled to idle to simulate the loss of an engine). All aircraft systems will be restored to normal operation prior to landing, except for simulated engine-out landings. Flight crew simulated

emergency procedures should not be used synonymously with the simulated emergency drills accomplished by the mission crew.

#### 4.3.5. Prohibited Simulated Emergencies.

4.3.5.1. Engine failure takeoff continued below 200AGL.

4.3.5.2. Multiple or combined simulated emergencies.

4.3.5.3. Three-engine rudder boost-out operations (one engine at idle and rudder boost off); however, three engine rudder boost out procedures may be practiced, e.g., one engine at idle and rudder boost on.

4.3.5.4. Practice actual engine shutdown, except during functional check flights (FCF).

4.3.5.5. Practice approach to stall recovery.

**4.4. Diverts.** The AC will ensure Airfield Ops, the SOF or the controlling C2 agency are notified as soon as practical and request assistance coordinating transportation, security, classified storage, and lodging, as required.

**4.5. Fuel Requirements and Optimization.** Flight planning and flight routes will be planned to optimize fuel efficiency to the maximum extent possible while ensuring mission accomplishment. Engine start times should normally occur no earlier than 30 minutes prior to takeoff. Missions may terminate after training is completed.

4.5.1. The AC/FE are responsible for monitoring the fuel status and updating bingo time/fuel as appropriate for weather and mission status.

4.5.2. Cruise. Crews will normally fly optimum altitude/endurance speed for en-route legs greater than one hour, weather and ATC permitting.

4.5.3. Orbit. Orbit speeds will maximize Fuel/Radar/Self Defense, as applicable.

4.5.4. Missions should be planned to arrive overhead the destination/worst case alternate fix with no less than 15,000 pounds fuel, or in accordance with AFI 11-202V3, whichever is greater.

4.5.4.1. Minimum landing fuel is 12,000 pounds. If it becomes apparent the aircraft will land with 12,000 pounds of fuel remaining or less, declare "Minimum Fuel" and land short of destination; or divert as required.

4.5.4.2. Emergency landing fuel is 10,000 pounds.

4.5.5. Aircraft Ground Refueling. FEs must monitor ground refueling when qualified maintenance and or fuels personnel are not available or cannot provide assistance.

4.5.5.1. Off-station Ground Refueling: Defense Fuel Supply Points (DFSP) located on military installations should to be used to procure aviation fuel to the max extent possible.

4.5.5.1.1. When DFSP resources are not available use Defense Energy Support Center (DESC) Into-Plane contract fuel providers to the maximum extent possible. When using the DESC Into-Plane contract location, ensure to procure the correct contracted product. If the wrong product is purchased, then the unit will be charged a non-contract price. If a non-contract vendor is used at a contract location units will

be charged a non-contract price. When no DESC into-plane contract exists at a commercial airport location, units are authorized to purchase fuel and services from any commercial vendor that has a Merchant Agreement with Multi Service Corporation (MSC) that accepts the Air Card contract. (DESC-I-31).

4.5.5.1.2. A list of DESC into-plane contract merchants for each contracted airport location can be found at: [http://ports.desc.dla.mil/ip\\_cis/ipcis.htm](http://ports.desc.dla.mil/ip_cis/ipcis.htm). The vendors that have agreements with MSC can be found by searching on the ICAO at: [https://www.airseacard.com/cgi-bin/airsea\\_website/fbo\\_locator.cgi](https://www.airseacard.com/cgi-bin/airsea_website/fbo_locator.cgi). Additional Air Card information can be found on the Fuel Card Program Management Office webpage at: <http://www.desc.dla.mil/DCM/DCMPage.asp?pageid=614>.

#### **4.6. Occupancy of Flight Crew Duty Positions.**

4.6.1. Pilot in Command (PIC). The pilot in command will be at a set of flight controls during all critical phases of flight. This does not preclude a seat swap with another AC or IP if such is designated on the Form 4324 *Flight Authorization*.

4.6.1.1. For missions with more than two qualified and current pilots, squadrons may designate secondary (double asterisk) PIC on the Flight Authorization. If more than one secondary PIC is designated, the primary PIC will determine who will act as PIC if both secondary PICs are occupying pilot seats at the same time.

4.6.2. Flight below 10,000' MSL. The AC will ensure, when able, that all flight deck seats are manned to assist in clearing during taxi operations and flight below 10,000 feet MSL.

4.6.3. Crew at Their Stations. Crew members will abide by AFI 11-202V3, ACC Sup regarding absence from their assigned duty station and occupying their duty position seats. During flight, if either pilot leaves the flight deck, a qualified FE, or an unqualified FE supervised by an instructor FE or IP, must remain on headset.

#### **4.7. Air Refueling (AAR).** ATP-56(B) provides detailed explanations of AAR procedures.

4.7.1. Copilots (CPs) are authorized to fly the aircraft up to and including pre-contact with any AAR qualified pilot in the left seat. Any CP may conduct AAR under IP supervision. CPs may AAR under AC supervision provided both are certified and current IAW AFI 11-2E-8V1. Copilots will not perform autopilot off AAR without IP supervision.

4.7.2. Override Boom Latching, or Tanker Manual Operation without tanker disconnect capability, will not be accomplished unless an actual fuel emergency exists. In the absence of mission operational directives, the OG/CC is the approval authority when a fuel emergency does not exist.

4.7.3. AAR Rendezvous. The NAV will direct the rendezvous until 1 mile or when the pilots declare visual with the tanker. On P-sorties without a NAV, the PIC is responsible for accomplishing the rendezvous.

4.7.4. AAR Overrun.

4.7.4.1. Crews may attempt to prevent an overrun internally by slowing to no less than 275 KIAS.

4.7.4.2. If the tanker falls below the 45-degree line on the weather radar, and an overrun is imminent, the NAV will advise the AC. The AC will conduct the overrun IAW ATP-56(B).

**4.8. Landing Gear and Flap Operations.** Before actuation of the gear or flaps, the Pilot Flying (PF) will call for the movement of the gear or flaps as applicable. The Pilot Not Flying (PNF) should normally verify appropriate airspeed and acknowledge the command by repeating it.

4.8.1. The landing gear should normally be operated by the PNF on command of the PF.

4.8.2. The flaps should be operated by the PNF the aircraft on command of the PF.

#### 4.9. Aircraft Lighting.

4.9.1. Exterior lighting will be operated IAW AFI 11-202V3, AFI 11-218, *Aircraft Operations and Movement on the Ground*, and applicable T.O.s.

4.9.2. During combat/contingency operations, the tactical situation may dictate the use of all, some or none of the aircraft exterior lights as determined by the AC. Lights-out operations during peacetime will be conducted in warning or restricted areas IAW AFI 11-202V3 unless a letter of agreement exists with the FAA.

4.9.3. Aircraft Interior Lighting. During night parking, use of the overhead flight deck lighting should be avoided until after the aircraft is chocked.

**4.10. Advisory Calls.** These calls will be made when instrument procedures are being flown. Advisory calls confirm time critical information between the PNF and the PF. Strict adherence to advisory calls with in-depth pre-flight planning and a detailed approach briefing during low visibility weather conditions greatly enhances crew situational awareness. In addition to the required advisory calls depicted in [Table 4.1](#) and [Table 4.2](#), the PF will acknowledge all flight parameter deviations as advised by the PNF. The NAV will back up the PNF and make advisory calls when necessary.

**Table 4.1. Non-precision Approaches.**

EVENT OCCURRENCE	PNF CALL	PF RESPONSE
First positive movement of the CDI	“Course alive”	(Acknowledge)
100 feet above FAF altitude	“Approaching (altitude)”	
1000 ft AGL	“Cleared to Land” or “No landing clearance”	(Acknowledge)
100 feet above step down altitude	“Approaching (altitude)”	
At step down fix	“Cleared to (altitude)”	(Acknowledge)
100 feet above Minimum Descent Altitude (MDA)	“Approaching Minimums”	
At MDA	“Minimums”	
Approx ½ mile from VDP	“Approaching VDP” (See note 1)	

At VDP	“VDP”	State intentions (See note 2)
At MAP	“Missed Approach Point” (See note 1)	State intentions (See note 3)

**Table 4.2. Precision Approaches.**

EVENT OCCURRENCE	PNF CALL	PF RESPONSE
First positive movement of the CDI	“LOC alive”	(Acknowledge)
First positive movement of the glideslope	“Glide Slope alive”	(Acknowledge)
1000 ft AGL	“Cleared to Land” or “No landing clearance”	(Acknowledge)
100 feet above Decision Height Altitude (DH)	“Approaching Minimums	
At DH	“Minimums” (See note 1)	State intentions (See note 2)
At 100’ above TDZE	“100 feet” (See note 1)	State intentions (See notes 3)

**Notes for Table 4.2 and Table 4.3:**

1. If the runway environment as defined in Air Force Manual 11-217 Volume 1, *Instrument Flight Procedures*, is in sight the PNF will provide a brief description of visual cues. (i.e. “rabbit lights,” “red termination bars,” “threshold lights,” “runway,” etc.)
2. PF will announce his/her intentions. Intentions will be either to land, continue, or go-around. Decision to continue or land will be IAW procedures outlined in Air Force Manual 11-217V1. Above DH or prior to the VDP, no response is required unless PF has runway in sight.
3. PF will announce his/her intentions. Intentions will be either to land or go-around. The decision to land from this position will be IAW procedures outlined in Air Force Manual 11-217V1 and PF should use extreme caution.

4.10.1. Any flight crewmember seeing a 200 feet deviation in altitude, +15/-5 knots in airspeed or a potential terrain/obstruction hazard, will immediately notify the PF. Deviations from prescribed procedures for the approach being flown will also be announced.

4.10.2. The NAV will announce the minimum ground speed and monitor the FMS ground speed throughout the approach.

4.10.3. The engineer will callout 100’, 50’ and 20’ using the pilot’s radio altimeter for all landings. Any deviation from these elevation calls will be briefed during the approach briefing.

**4.11. Radio Discipline.** There is no confidentiality regarding aircraft crew communications, recorded or otherwise. Crewmembers are expected to maintain a high degree of cockpit professionalism and crew coordination at all times.

4.11.1. Sterile Cockpit. Limit conversation to that essential for crew coordination and mission accomplishment during taxi, takeoff, A/R, approach, landing, and any flight below 10,000 feet MSL.

4.11.2. Aircraft Interphone. Flight deck crewmembers will monitor the flight deck interphone (FLT net) during all phases of flight. One flight crew member will monitor primary mission crew interphone during critical phases of flight. Navigators should monitor Nets 8 and the FE should monitor the IMT. All crew members should monitor the IMT/MX net to the maximum extent possible.

#### 4.11.3. Command Radios.

4.11.3.1. The PNF normally makes all ATC radio calls.

4.11.3.2. In terminal areas, all flight crewmembers should monitor the primary radio unless directed otherwise. A crewmember will be designated to monitor C2 frequencies on the inbound and outbound legs.

4.11.3.3. The pilot operating the radios will notify the crew which radio is primary, and update the crew when the primary radio changes.

4.11.3.4. Flight crew will monitor emergency frequencies IAW AFI 11-202V3.

4.11.3.5. Use secure and jam resistant communications to the maximum extent possible in a threat environment and limit radio transmissions within the objective area to those required for safety of flight or factors affecting force employment.

4.11.3.6. HF Communications. Confine message traffic to essential operational matters. Perform an HF radio ground check before takeoff if the use of HF radio may be required for ATC or C2 communications. Establish HF contact before going out of UHF and VHF range. If unable to establish HF contact with the controlling HF station, and an alternate means of relay of ATC information in oceanic areas is not available, comply with FLIP.

4.11.3.7. 8.33 kHz Radios. 8.33 kHz radios capability is a requirement in EUROCONTROL airspace. Until configured for 8.33 kHz operations, pilots flying in European airspaces are to notify the controller that you are “negative 8.33 equipped” and request a UHF frequency.

#### 4.11.3.8. Air Refueling.

4.11.3.8.1. Prior to one mile, the NAV is normally primary on the AAR radio and pilots primary on ATC. Guard slice may be removed from the AAR radio.

4.11.3.8.2. At one mile, pilots normally take control of the AAR radio.

4.11.3.8.3. Post AAR: Radios and Nets back to normal cruise/on-station settings.

**4.12. In-Flight Briefings.** Takeoff, air refueling, descent, approach, touch-and-go, and full stop briefings will be IAW the T.O. 1-E8-C-1, AFMAN 11-217 Volume 1, *Instrument Flight Procedures*, and AFI11-202V3.

#### **4.13. Aircraft Taxi, Obstruction Clearance Criteria.**

4.13.1. Do not taxi an aircraft within 25 feet of obstructions without wing walkers monitoring clearance between aircraft and obstructions. With wing walkers, avoid taxi obstructions by at least 10 feet. **EXCEPTION:** IAW AFI 11-218, aircraft may taxi without marshallers/wing walkers at home station along fixed taxi lines in parking lanes which have been measured to ensure a minimum of 10 feet clearance from permanent obstructions. Aerospace Ground Equipment and vehicles are considered permanent obstructions when

parked in designated areas. Parked aircraft are not considered permanent, and 25 feet of clearance, or a wing walker, is required. The exception does not apply to obstructions within 25 feet while taxiing outside of parking.

**4.14. Foreign Object Damage (FOD) Avoidance.** Make every effort to minimize the potential for engine FOD. Crews should:

4.14.1. Carefully review airfield layout paying particular attention to taxi routes, turn requirements, and areas for potential FOD. Pay attention to other aircraft with engines running on parking aprons, adjacent taxiways, hammerheads, and arm/de-arm areas.

4.14.2. Minimize power settings during all taxi operations.

4.14.3. Avoid (when possible) 180-degree turns.

4.14.4. Avoid (when possible) taxi operations, which would position an engine over an unprepared or un-swept surface. If it becomes necessary to position an engine over an unprepared or un-swept surface, the engine should be left in idle (to the maximum extent possible) until the engine is back over an improved surface.

**4.15. JTIDS Altitude De-confliction.** Errors of up to 2000 feet can exist between the altitude reported on JTIDS and the altitude reported by IFF. Crews must use extreme caution when using JTIDS tracks for traffic avoidance.

**4.16. Traffic Alert and Collision System (TCAS).** It is imperative to follow resolution advisories (RAs) to obtain the aircraft separation computed by TCAS. Failure to follow the computed RA may increase the probability of a midair collision. See Chapter 6 for TCAS procedures.

**4.17. Radio Altimeter.** Set the radio altimeter dependent upon the phase of flight. For instrument approaches, set DH or MDA as applicable. Set 2,500 for en-route cruise per T.O. 1E-8C-1. Any crewmember detecting an unanticipated radio altimeter annunciator light will immediately notify the pilot flying. Terrain clearance and aircraft position must be verified. An immediate climb is warranted if uncertainty exists.

**4.18. Ground Proximity Warning System (GPWS).** While flying instrument approaches, follow T.O. 1E-8C-1 guidance regarding GPWS alerts. All other GPWS alerts will be handled as follows:

4.18.1. For operations in day VMC conditions, with terrain and obstacles clearly in sight, the PF will call runway and/or terrain in sight, state intentions and visually clear terrain.

4.18.2. For operations at night or in IMC, if the aircraft position cannot be verified, immediately and simultaneously establish a climb while rolling wings level, and add maximum power until the "terrain" warning has ceased and adequate terrain clearance is verified. Do not delay pull-up for diagnosis of the low altitude warning. Failure to roll wings level during the maneuver described above will decrease stall margin and climb rates at heavy aircraft gross weights.

**4.19. Formation.** The E-8 is authorized to fly the following formation procedures:

4.19.1. AAR formation as described in ATP-56 and T.O. 1E-8C-1.

4.19.2. As required to accomplish assigned special missions.

**4.20. Aircraft Speed.** ACs may only exceed 250 KIAS below 10,000MSL during CONUS sorties while complying with the restrictions set forth in AFI 11-202V3. When operating OCONUS, ACs will not exceed the speed authorizations of a foreign country unless required for defensive procedures.

**4.21. Navigation.**

4.21.1. Inertial Navigation Unit (INU). The Gyro Compass alignment is the preferred method of alignment for continuation training missions unless time and conditions permit an Enhanced Interrupted Alignment (EIA) on one or more INUs.

4.21.1.1. EIA is an optional method of INU alignment for operational missions. A strong understanding of the limitations and benefits of EIA is recommended before using this method.

4.21.1.2. Only one INU will be used for air alignment training. The other INU will be available for navigation.

4.21.2. Oceanic Crossings. Trans-Oceanic crews will obtain current Atlantic/Pacific Route messages prior to flight. Deployment Planning Cell (DPC) personnel may assist with planning deploying/redeploying OCONUS sorties. Crews should be familiar with appropriate country over flight requirements such as diplomatic clearances, ICAO radio procedures, etc.

4.21.2.1. The navigator is responsible to ensure an equal time point (ETP) is calculated between each in-flight refueling and the destination for oceanic crossings. The ETP is a point along the route at which the aircraft may either proceed to the destination, first suitable airport, return to departure base or last suitable airport in the same amount of time based on all engines operating.

4.21.3. Due Regard. ACs should be familiar with the concept of due regard and be prepared to declare such if necessary. Due regard is defined as operational situations that do not lend themselves to International Civil Aviation Organization (ICAO) flight procedures, such as military contingencies, classified missions, politically sensitive missions, or certain training activities. Flight under "Due Regard" obligates the military PIC to be his or her own air traffic control (ATC) agency and to separate his or her aircraft from all other air traffic. See FLIP General Planning, sec. 7 and AFI 11-202V3.

4.21.4. Charts and Data.

4.21.4.1. Navigational charts will be annotated IAW AFI 11-202V3, MAJCOM Supplements and T.O. 1-E-8C-1.

4.21.4.2. If an appropriate FLIP document is not available, NAVs will use a terrain chart to monitor the aircraft position and ensure terrain clearance during departures and arrivals. The terrain chart should be an ONC or larger scale chart and available at the NAV station. Crews will not use terrain charts to build their own obstacle clearance departures.

4.21.4.3. Crews should ensure the PCMCIA data card is current for every flight. PCMCIA cards will be removed prior to any mission system being zeroized to prevent inadvertently deleting the data. If the data card is not current, the flight may continue

provided all waypoint coordinates are cross-referenced to current FLIP products or CFPS products that were prepared using current DAFIF.

4.21.5. Position checks will be made as required to comply with RNP and RNAV requirements listed below.

4.21.6. The NAV will track all in-flight clearances and maintain a flight log IAW AFI11-202V3, MAJCOM Sup.

4.21.7. RNAV, RVSM and RNP Airspace. All E-8s are certified for Area Navigation (RNAV) Reduced Vertical Separation Minimum (RVSM) and Required Navigational Performance (RNP) airspace

4.21.8. RNP-10/BRNAV Equipment Updates.

4.21.8.1. Mission Planning. Crews will check the appropriate NOTAM and FLIP products to determine airspace and filing requirements. Crews will plan appropriate update points along the route of flight to extend the RNP/BRNAV time limit for an additional 7.5 hours.

4.21.8.2. Updates. Crews will update both INU's while in ground NAVAID coverage prior to oceanic crossing to re-hack the 7.5 hour RNP/BRNAV time limit. Another update will occur once within ground NAVAID coverage after oceanic crossing. Additionally, update the INU before the position drifts five miles from the actual position.

4.21.8.3. Contingencies. Crews will notify ATC any time the instruments required in the MEL for RNP/BRNAV airspace are lost, and coordinate a new clearance if required.

4.21.9. Required Navigation Performance (RNP Airspace). Airspace where RNP is applied is considered special qualification airspace. The E-8 is approved for operation in RNP airspace with operational limitations based on navigational equipment.

4.21.9.1. RNP-10 compliance includes navigation accuracy within 10 NM of actual position 95 percent of the time. The E-8 may operate in RNP-10 airspace when the following conditions are met:

4.21.9.1.1. The "INU-only" navigation mode is selected for the steering solution. Other Navigation Modes may not be used for operations in RNP-10 airspace.

4.21.9.1.2. Updates will be IAW RNP/BRNAV update and contingency procedures in this volume.

4.21.10. Basic Area Navigation (BRNAV) and RNP-5 Airspace. Compliance includes navigation accuracy within 5NM of actual position 95 percent of the time. BRNAV navigation accuracy criteria is RNP-5. Aircraft may operate in BRNAV/RNP-5 airspace when the following conditions are met:

4.21.10.1. The "INU-only" or the INU with manual in-flight updating or point to point navigation using the flight management system (FMS) shall be the only navigation modes used for operations in BRNAV airspace.

4.21.10.2. Should NAVAIDS become unavailable, either through radio failure or denial, the "INU-only" solution cannot be used longer than 7.5 hours from the time the INUs

were commanded to the NAV mode or the last update, whichever is later. Refer to RNP-10/BRNAV Update and Contingency Procedures in this volume.

4.21.10.3. Updates will be IAW RNP/BRNAV update and contingency procedures in this volume.

4.21.11. RNP-10/BRNAV Update and Contingency Procedures.

4.21.11.1. Aircraft must exit RNP-10/BRNAV airspace 7.5 hours after the INU systems were placed in NAV mode after either a full gyrocompass ground alignment or an in-flight update.

4.21.11.2. An in-flight update may be conducted on one INU at a time within coverage of an FAA/CAA approved radio-NAVAID.

4.21.11.3. The resulting update must provide a position that agrees with the position provided by the radio-NAVAID plus or minus 0.3 NM.

4.21.11.4. After the first INU successfully completes an in-flight update and its position accuracy is verified, the second INU may be updated and its position compared to the first INU, or the radio-NAVAID.

4.21.12. RNP/BRNAV Flight Planning. The PIC will review airspace requirements (i.e. specific RNP level and contingency actions, etc), verify the aircraft is approved for RNP/BRNAV operation, and assess mission impact when flying in RNP-10/BRNAV airspace.

4.21.12.1. En-route. Both INUs must be operational at the RNP-10/BRNAV entry point. Periodic crosschecks will be accomplished to identify navigation errors and prevent inadvertent deviation from ATC cleared routes. Advise ATC of the deterioration or failure of navigation equipment below navigation performance requirements and coordinate appropriate actions.

4.21.13. Post Flight. Document malfunctions or failures of RNP/BRNAV required equipment, including the failure of this equipment to meet RNP/BRNAV tolerances, in an AFTO Form 781.

4.21.14. Reduced Vertical Separation Minimum (RVSM) Airspace. Airspace where RVSM is applied is considered special qualification airspace. Both the aircrew and the specific aircraft must be approved for operations in these areas. IRC currency establishes IRC certification for E-8C aircrew. All E-8's are approved for unrestricted use in the full RVSM envelope. Refer to FLIP GP and the following guidance for RVSM requirements:

4.21.15. RVSM Equipment. Primary altimeters, the autopilot (to include the altitude hold function), the altitude alerter, and the IFF transponder must be fully operational before entry into RVSM airspace. Should any of this equipment fail before entering RVSM airspace, request a new clearance so as to avoid this airspace.

4.21.15.1. Autopilot. The autopilot shall be engaged during level cruise except when circumstances such as the need to re-trim the aircraft or turbulence procedures require disengagement.

4.21.15.2. Altimeters. Crosscheck the altimeters (STBY to RESET) before or immediately upon entry to RVSM airspace. The PIC will ensure that readings of all altimeters are recorded and retained for use in contingency situations.

4.21.15.3. Should any of the required equipment fail after entry into RVSM airspace, immediately notify ATC and coordinate a plan of action.

4.21.16. RVSM Operations. Continuously monitor systems and crosscheck altimeters to ensure they agree  $\pm 200$  ft. Aircrews should limit climb and descent rates to 1,000 feet per minute when operating in the vicinity of other aircraft to reduce potential effects on TCAS operations.

4.21.17. Post Flight. Document malfunctions or failures of RVSM required equipment in the AFTO Form 781, including the failure of equipment to meet RVSM tolerances.

**4.22. Bird/Wildlife Aircraft Strike Hazard (BASH) Programs.** BASH programs are centralized base efforts that provide information cross-feed, hazard identification, and a consolidated course of action. BASH programs are developed and executed by host base Safety and Bio-environmental offices and approved by host base commanders. Some airfields, i.e. Army, do not have BASH programs and will not set a Bird Watch Condition (BWC), requiring crews to use all available resources to determine local bird conditions

4.22.1. Mission Planning: ACs will reference the Avian Hazard Advisory System (AHAS) website (<http://www.usahas.com>) within 24 hours of mission execution to determine forecast bird strike potential at takeoff, transition and landing bases for ORM purposes.

4.22.2. Flight: The AC will obtain the airfield's actual BWC from ATIS, tower, SOF, airfield operations or pilot assessment. Crews may request an AHAS update within an hour of proposed takeoff or landing via C2 agencies to get live data with trend information. Aircrews will comply with the following restrictions:

4.22.2.1. BWC Low – No operating restrictions.

4.22.2.2. BWC Moderate. Initial takeoffs and final landings are authorized only if the departure and arrival routes will avoid bird activity. Flight crews should consult with the SOF prior to landing or departing. Continuation training is restricted to low approaches at or above 2,000 AGL. VFR traffic patterns and IFR circling approaches are prohibited.

4.22.2.3. BWC Severe (BWCS). All takeoffs and landings are prohibited. Waiver authority is local OG/CC or SOF.

4.22.2.4. This does not prohibit an AC from requesting a single takeoff for the purpose of departing the local area after an unexpected ground delay that pushed the takeoff into the automatic BWCS or from performing a single approach to a full stop during BWCS when birds do not appear to be a factor. In this situation the AC may request a waiver from the SOF for a one time takeoff or full stop. The SOF will visually assess the situation and approve or disapprove the request based on actual observed conditions on the airfield and in the arrival/departure corridor.

4.22.2.5. If the SOF authorizes a waiver to takeoff, the AC will depart using the noise abatement procedure in the T.O. 1E-8C-1, Chapter 2 with a climb at  $V_{co}+10$  to 3000' AGL or the altitude assigned by ATC, whichever is lower, before lowering the nose and accelerating.

4.22.2.6. If the SOF authorizes a waiver for a full stop, the AC will fly an ILS or a visual approach using the best available glide path guidance. If a non-precision approach is required due to the inability to fly an ILS or visual approach, the AC will limit the time spent flying at or below MDA by planning a constant rate descent to arrive at the MDA at, or just prior to, the VDP. If a circling approach is required, the AC will fly the circling maneuver at the highest possible altitude up to VFR pattern altitude and limit time spent flying at the circling MDA.

4.22.2.7. The AC is the final authority regarding the conduct of a full stop landing during bird watch condition severe if the recovery is necessitated by an in-flight emergency. Time permitting, the SOF should provide an advisory call to the emergency aircraft regarding the actual bird conditions being observed at the airfield.

4.22.2.8. All waivers for a single takeoff or full stop landing at Robins AFB during BWCS will be documented in both the daily SOF log and the Wing Operations Center Daily Log.

4.22.3. ACs are the final authority and may delay takeoffs and arrivals due to BWC. Coordinate delays through appropriate C2 authority.

4.22.4. Following a bird/wildlife strike, pilots should land as soon as practical, record the bird strike in the AFTO 781, and complete and turn in to maintenance debrief both sides of 116 ACW Form 5. If the landing is off station, turn in the Form 5 to the local Safety office (if available) and maintenance debrief /116 ACW Safety office upon return to Robins.

**4.23. Functional Check Flights (FCFs) and In-flight Operational Check Flights (IFOCs).** FCFs and IFOCs will be accomplished IAW AFI 21-101, *Aircraft and Equipment Maintenance Management*, and the OG supplement.

4.23.1. Requirements. An OCF is designed to check mission equipment/software builds and will be performed upon request, normally when:

4.23.1.1. Aircraft are returned following depot modifications and/or C checks.

4.23.1.2. The first flight after a software release.

4.23.1.3. The 116 AMXS determines an OCF should be performed due to extensive PME maintenance.

4.23.2. Scheduling. Specific scheduling responsibilities are as follows:

4.23.2.1. The requestor of the OCF (normally CSS, MXS, or XP) will identify applicable areas of the master OCF checklist (found on the OGV web page). The requestor will deliver the "modified" OCF checklist to OSS schedulers during the applicable scheduling meeting. OSS and MXG schedulers will negotiate the date, time, and requirements for the OCF. The OSS will then task and deliver the modified checklist to the assigned squadron scheduler NLT 5 duty days prior to the OCF.

4.23.2.2. CSS, Det 2 and/or Northrop Grumman will supply OSS the full name, rank, social security number and security clearance information on non-116 ACW personnel requesting to fly on the OCF sortie.

4.23.3. Crew Manning. The SQ/DO will determine the crew manning as required. The MCC is responsible for acquiring the applicable OCF checklist from the SQ/DO. The MCC will ensure all necessary checklists are completed, and write an OCF report.

4.23.4. Software OCF. CSS will provide information to the SQ/DO or MCC on specific Deficiency Reports (DR) included in the new software version. The MCC will ensure the corrections for these DRs are tested for operational suitability. Some can be verified during ground test, but others will require flight test. The OCF report will specifically list passed and failed Discrepancy Reports (DRs) along with reasons for any failures.

4.23.5. Reports. Crewmembers will provide all relevant findings to the MCC. After an OCF is completed, the MCC will send an after action report to OGV and MXG/QA. OGV will forward discrepancies to OG/CC.

**4.24. Participation in Aerial Events.** See AFI 11-209, *Aerial Event Policy and Procedures*, and the appropriate MAJCOM supplements. Aerial events must be sanctioned and approved by the appropriate military authority and the Federal Aviation Administration (FAA).

**4.25. Aircraft Security.** The E-8 is designated a security priority Protection Level 2, or equivalent resource. The AC is responsible for ensuring aircraft security is provided at the destination and any en-route stops. Guidance can be found on aircraft security and preventing and resisting aircraft piracy (hijacking) of E-8 aircraft in AFI 13-207, *Preventing and Resisting Aircraft Piracy (Hijacking)*, AFI 31-101, *The Air Force Installation Security Program*, *FAA NOTICE 7110.422* and other specific MAJCOM security publications. Aircrews will not release information concerning hijacking attempts or identify armed aircrew members or missions to the public.

**4.26. Suspected Laser Response/Exposer.** When encountering laser illumination, aircrew should not stare at the laser source, but transition to aircraft instruments and turn away from the threat. Aircrews should recognize the laser may be associated with a weapon posing a greater threat and initiate appropriate evasive action. If a laser threat exists in vicinity of an airfield of intended arrival or departure, ALEP devices should be donned prior to descent from cruise altitude, or prior to takeoff, as applicable. Doffing of ALEP devices after departing a defined laser threat area or after landing is left to discretion of the aircraft commander. The following procedures should be implemented immediately following suspected laser exposure.

4.26.1. Look away from laser source; do not remove ALEP devices.

4.26.2. Transition to aircraft instruments.

4.26.3. If exposed pilot is flying the aircraft, transfer control to unaffected pilot.

4.26.4. Assess visual functionality. If visual disturbance persists for more than 60 seconds, declare in-flight emergency and return to base as soon as practical.

4.26.5. Notify command and control agency of suspected laser incident.

4.26.6. Avoid rubbing eyes.

4.26.7. If vision returns to normal and there is no pain within 3-5 minutes, the AC will consider the value of continuing the mission against potential loss of an aircrew member who may have sustained eye damage. The AC will determine whether or not to return to base.

4.26.8. Upon return to base, accomplish intelligence debrief and report suspected laser exposure incidents IAW procedures outlined in AFI 11-301 Volume 4, *Aircrew Laser Eye Protection (ALEP)*.

4.26.9. Aircrew who suspect exposure to laser radiation from either friendly or hostile sources should report to Flight Surgeon's Office or nearest emergency room where they can be examined by an ophthalmologist immediately upon landing.

## Chapter 5

### MISSION CREW PROCEDURES

**5.1. General.** This chapter contains roles and responsibilities for certain mission crew positions. This information is in addition to AFI 11-214, *Aircrew, Weapons Director, and Terminal Attack Controller Procedures for Air Operations*, AFTTP 3-1.30, *Tactical Employment Joint STARS*, T.O. 1E-8C-43-1-1, *Flight Manual, USAF Series, E-8C Aircraft Mission Systems Operations*, T.O. 1E-8C-43-1-1-1, *Supplemental Flight Manual—Mission Systems Operations*, and the current syllabus for the respective crew positions. Not all positions will have additional information.

**5.2. E-8 Mission Crew Composition.** The E-8C mission crew is comprised of 11 different specialties. They are Mission Crew Commander (MCC), Deputy Mission Crew Commander (DMCC), Senior Director (SD), Surveillance Officer (SO), Air Weapons Officer (AWO), Senior Surveillance Manager (SSM), Air Operations Technician (AOT), Airborne Target Surveillance Supervisor (ATSS), Airborne Intelligence Officer/Technician (AIO/T), Airborne Communications Systems Technician (CST) and Airborne Radar Technician (ART). Mission crew duties may be accomplished by professionally qualified civilian employees with OG/CC approval.

**5.3. Responsibilities.** Mission crewmembers will adhere to following responsibilities and procedures in addition to applicable directives.

#### 5.3.1. Mission Crew Commander.

5.3.1.1. Responsible authority for assigned BM-C2ISR mission tasks and coordinates with the AC to ensure effective sortie and mission accomplishment.

5.3.1.2. Supervise execution of HHQ assigned tasks. Ensure crewmember adherence to Rules of Engagement (ROE) and SPINS. During decentralized operations the MCC is the onboard authority for determining mission tasking.

5.3.1.3. Declare operations normal/on-station/off-station and advise external agencies about the aircraft status.

5.3.1.4. Collate and compile mission reports and summaries.

5.3.1.5. Responsible for accounting and safeguarding of classified materials and proper destruction.

5.3.1.6. Tailor mission crew and positional responsibilities based upon mission requirements and operations.

#### 5.3.2. Deputy Mission Crew Commander.

5.3.2.1. Act as Army liaison to MCC and mission crew. Ensure that the Ground Commander's intent is understood and that JSTARS crewmembers understand how ground operations will be executed.

5.3.2.2. Ensure the ground commander and common ground stations (CGSs) are aware of on-station/off-station and aircraft status.

5.3.2.3. Manage Information flow to supported ground units via radios and all available data links (FBCB2, IDM, SCDL, DATASAT, & AIRNET/INMARSAT).

5.3.2.4. Coordinate with the ground Fire Support Officer when required.

5.3.3. Airborne Intelligence Officer/Technician.

5.3.3.1. Analyze incoming reports from external intelligence collection agencies and determine the impact on mission execution.

5.3.3.2. Ensures amplifying intelligence data is fused as applicable to enhance the BM-C2ISR mission.

5.3.3.3. Verify and update the order of battle data.

5.3.3.4. Operation of the Broadcast Intelligence system.

5.3.3.5. Report radar tracks both internally/externally to intelligence collection agencies for further collection and amplification.

5.3.4. Senior Director.

5.3.4.1. Monitor and assess current air/ground situation; coordinate mission changes with appropriate agencies.

5.3.4.2. Direct BM-C2 mission execution with regard to Find, Fix, Track, Target, Engage and Assess (F2T2EA). Coordinate with the SO for radar management and surveillance operations. C2 includes procedural control, managing mission changes, striking targets and directing battlespace logistical efforts (e.g. tanker flow).

5.3.4.3. Develop an effective communications plan.

5.3.5. Surveillance Officer.

5.3.5.1. Conduct effective radar timeline management; inform crew of sensor anomalies.

5.3.5.2. Coordinate with SD for management of the Operations Section.

5.3.5.2.1. The SO is responsible for signing out the SO Flyaway Kit from DOW and carrying on every mission flight. The kit will contain:

5.3.5.2.1.1. T.O. 1E-8C-43-1-1-1

5.3.5.2.1.2. AFTTP 3-1.JSTARS

5.3.5.2.1.3. Appendix H (Classified PHB)

5.3.5.2.1.4. Classified In-Flight Guide (IFG)

5.3.5.2.1.5. E-8C Security Classification Guide (SCG)

5.3.6. Senior Surveillance Manager.

5.3.6.1. Ensure tracking responsibilities/continuity in the AOR.

5.3.6.2. Coordinate with the CST for JTIDS link operations.

5.3.6.3. Oversee activities of Surveillance Section.

5.3.7. Air Weapons Officer.

5.3.7.1. Conduct BM-C2 mission execution with regard to F2T2EA using procedural control, target engagement, TAC (A), managing ATO/ACO changes and directing battle space logistical efforts.

5.3.8. Air Operations Technician.

5.3.8.1. Use sensor data for accurate tracking in assigned AOR.

5.3.9. Airborne Target Surveillance Supervisor.

5.3.9.1. Maintain voice and SCDL contact with CGS to accomplish ground component commander objectives; process radar service requests as required.

5.3.10. Airborne Radar Technician.

5.3.10.1. Initiates, operates and maintains radar and O&C (computer) systems. Monitors system status and troubleshoots malfunctions to keep systems operational, and acts as primary fire fighter for emergencies involving these systems.

5.3.11. Communications Systems Technician.

5.3.11.1. Initiates, operates and maintains all aircraft communications including voice and data link systems. Monitors system status and troubleshoots malfunctions to keep systems operational, and acts as primary fire fighter for emergencies involving these systems.

5.3.12. Liaison Personnel. US Army personnel and US Marine Corps Liaison Officers (MARLOs) in support of either the Airborne Command Post (ACP) or Corps operations are allowed to occupy mission crew seats and operate mission equipment provided they are monitored by qualified JSTARS mission crewmembers.

## Chapter 6

### CHEMICAL, BIOLOGICAL, RADIOLOGICAL, NUCLEAR, AND HIGH YIELD EXPLOSIVE (CBRNE) OPERATIONS

**6.1. General Information.** Potential adversary use of CBRNE weapons against a friendly airfield presents a serious threat to flying operations. Although the most effective way for aircrews to avoid this threat is to be airborne before those weapons are detonated or dispersed and then land at a field that has not been contaminated, all personnel must be prepared to operate from a field that has come under CBRNE attack.

**6.2. Mission Preparation.** Be aware of the status of the CBRNE environment at the planned launch and recovery airfields, potential divert bases, and throughout the area in which the sortie may fly. Know the current and forecast surface wind direction and the MOPP level in effect for relevant sectors of the airfield. Don appropriate aircrew chemical defense equipment (ACDE) or Ground Crew Ensemble (GCE) to match the appropriate MOPP level (reference AFMAN 10-100, *Airman's Manual*) and carry individual protective equipment (IPE) as required.

**6.3. Stepping to Fly and Aircraft Preflight.** This may entail donning ACDE or transitioning from GCE to ACDE. Take precautions to protect aircrew from injury and or contamination while in transit from the squadron facility to the aircraft. If possible, transport aircrew in a vehicle that provides overhead cover (enclosed vehicle). If aircrew travel on foot is unavoidable, choose a route that takes maximum advantage of available overhead cover (sun shades, buildings, etc.) to avoid agents that may be settling from the air. If extra aircrew members are available for preflight duties, consider assigning them to do so wearing GCE. This will allow the aircrew actually flying to minimize exposure.

6.3.1. Alarm Red (or Theater Equivalent) Prior to Engine Start. If Alarm Red occurs during the step or preflight process, take cover and don appropriate MOPP. This may require use of the ground crew mask. A hardened aircraft shelter (HAS) provides optimum protection, if available. Use caution if entering a HAS that contains aircraft and/or equipment. Close doors after entry. If a HAS or other overhead cover is not immediately available, accept the best rapidly reachable cover.

**6.4. Engine Start to Takeoff.** If a HAS is available, use it to minimize exposure time by accomplishing aircraft pre-flight and engine start procedures inside it (if local procedures permit) and by delaying taxi time as long as possible prior to takeoff.

6.4.1. Aircraft Launch to Survive (LTS). Units will develop local procedures to provide this option to the commander. In general, aircraft may LTS any time after engine start if they have sufficient fuel and safe, expeditious access to a runway. This option may only be practical for aircraft that are near EOR prior to takeoff or that have just landed.

6.4.2. Alarm Red Prior to Taxi. If in a HAS, the normal procedure is to shut down. Engine noise may preclude effectiveness of normal alert notification procedures, so ensure ground personnel are aware of the alarm warning, assume proper MOPP, and close HAS doors. Use hand signals if necessary.

6.4.3. Alarm Red (or Theater Equivalent) After Taxi. Units typically establish procedures for this contingency depending on whether additional protection is available along the taxi

route (empty HAS, for instance). Ideally, ground crew sheltering in such a HAS would be available to assist in normal engine shutdown procedures and to close HAS doors. If protection is not available, the best option may be LTS. Maintain contact with Command and Control (C2) entities (Wing Operations Center, Maintenance Operations Center, Supervisor of Flying, etc.) to ensure unity of effort in the overall plan.

### **6.5. Takeoff to Landing.**

6.5.1. Contamination. If Chemical Warfare (CW) agent contamination has occurred prior to takeoff, then flying the aircraft will dissipate the agent to some degree. The total amount of dissipation will be greater with lower flight altitudes and longer flight times. Because the agent may have entered wheel wells, flaps, etc., consider flying in landing configuration to increase airflow to these areas. In any circumstances, merely flying the aircraft is unlikely to achieve complete decontamination.

6.5.2. Preparing to Land. Aircrew should remain aware of the status of primary and alternate landing locations. Do not attempt to land during Alarm Red situations unless there is no other option. Follow C2 directions and either hold or divert. If mission needs preclude divert, hold until the Alarm Red (or theater equivalent) has cleared or become an Alarm Black. Prior to landing, gain awareness of contaminated sectors of the airfield and of current/forecast surface winds. Use this information in conjunction with C2 direction to plan a route from landing to engine shutdown. The liquid deposition phase following a CW airburst attack can extend up to 1 hour. If landing during Alarm Black, expect a contaminated environment and MOPP 4.

**6.6. Landing to Engine Shutdown.** Take advantage of any protection available, minimizing taxi time and distance. Maintain contact with C2 in order to remain aware of unexploded ordnance and/or damage to airfield movement surfaces. If a HAS is available and local procedures permit, accomplish engine shut-down and post-flight procedures there. If Alarm Red (or Theater Equivalent) occurs between landing and engine shutdown, considerations are similar to those discussed in the engine-start-to-takeoff section.

**6.7. After Engine Shutdown.** Don appropriate MOPP if not already worn. If circumstances permit, accomplish normal post-flight inspection procedures. If the aircraft is not contaminated, close doors, hatches, and windows. If there is any suspicion of personnel contamination, aircrew will process through an aircrew contamination control area (ACCA). Accomplish maintenance debriefings under cover to the maximum extent possible.

### **6.8. Forms Adopted.**

6.8.1. AF Form 847, *Recommendation for Change of Publication.*

6.8.2. AFTO Form 781, *ARMS Aircrew/Mission Flight Data Document.*

6.8.3. Customs Form 7507, *General Declaration.*

6.8.4. AF Form 15, *USAF Invoice.*

6.8.5. AF Form 1199, *Air Force Entry Control Card.*

PHILIP M. BREEDLOVE, Lt Gen, USAF  
DCS, Operations, Plans and Requirements

## ATTACHMENT 1

## GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

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**NOTE: When applicable, ANG and ACC Supplements apply**

*Abbreviations and Acronyms*

**AC**—Aircraft Commander

**ACC**—Air Combat Command

**ACCA**—Contamination Control Area

**ACDE**—Aircrew Chemical Defense Ensemble

**ACP**—Airborne Command Post

**AIO/T**—Airborne Intelligence Officer/Technician

**AF**—Air Force

**AFFSA**—Air Force Flight Standards Agency

**AFI**—Air Force Instruction

**AFJI**—Air Force Joint Instruction

**AFMAN**—Air Force Manual

**AFPD**—Air Force Policy Directive

**AFTO**—Air Force Technical Order

**AGL**—Above Ground Level

**AFE**—Aircrew Flight Equipment

**AMC**—Air Mobility Command

**ANG**—Air National Guard

**AR**—Air Refueling

**ARMS**—Aviation Resource Management System

**ART**—Airborne Radar Technician

**ASRR**—Airfield Suitability and Restrictions Report

**ATC**—Air Traffic Control

**ATIS**—Automated Terminal Information Service

**ATO**—Air Tasking Order

**ATSS**—Airborne Target Surveillance Supervisor

**BM**—Battle Management

**BWC**—Bird Watch Condition

**C2**—Command and Control

**CBRNE**—Chemical, Biological, Radiological, Nuclear, and High-Yield Explosive

**CGS**—Common Ground Station

**COMSEC**—Communication Security

**CP**—Co-Pilot  
**CSS**—Computer Systems Squadron  
**CST**—Airborne Communications System Technician  
**CW**—Chemical Warfare  
**DETCO**—Detachment Commander  
**DH**—Decision height  
**DMCC**—Deputy Mission Crew Commander  
**DO**—Director of Operations  
**DOD**—Department of Defense  
**DRU**—Direct Reporting Unit  
**ETA**—Estimated Time of Arrival  
**F2T2EA**—Find, Fix, Track, Target, Engage and Assess  
**FAA**—Federal Aviation Administration  
**FBCB2**—Force XXI Battle Command Brigade-And-Below  
**FCF**—Functional Check Flight  
**FE**—Flight Engineer  
**FLIP**—Flight Information Publication  
**FOA**—Field Operating Agency  
**FOD**—Foreign Object Damage  
**FT**—Foot or feet  
**FT**—LBS-Foot-pounds  
**GCE**—Ground crew Chemical Ensemble  
**GP**—General Publication  
**HAA**—Height Above Aerodrome  
**HAT**—Height Above Touchdown  
**HHQ**—Higher Headquarters  
**HQ**—Headquarters  
**IAW**—In accordance with  
**ICAN**—Interim Capability for Airborne Networking  
**IDM**—Improved Data Modem  
**IFOC**—In-flight Operational Check  
**IFR**—Instrument Flight Rules

**INU**—Inertial Navigation Unit

**IP**—Instructor Pilot

**ISR**—Intelligence, Surveillance, and Reconnaissance

**JSTARS or Joint STARS**—Joint Surveillance Target Attack Radar System

**JFTR**—Joint Federal Travel Regulation

**JTIDS**—Joint Tactical Information Distribution System

**KIAS**—Knots Indicated Airspeed

**LTS**—Launch to Survive

**LPU**—Life Preserver Unit

**MAJCOM**—Major Command

**MCC**—Mission Crew Commander

**MDA**—Minimum Decent Altitude

**MEA**—Minimum En Route Altitude

**MEL**—Minimum Equipment Listing

**MEP**—Mission Essential Personnel

**MPC**—Mission Planning Cell

**MSL**—Mean Sea Level

**NAF**—Numbered Air Force

**NAV**—Navigator

**NM**—Nautical mile

**NOTAM**—Notice to airmen

**OG**—Operations Group

**OGV**—Operations Group Standardization and Evaluation

**OPORD**—Operational Order

**OPR**—Office of primary responsibility

**PFT**—Programmed Flying Training

**PIC**—Pilot in Command

**PL**—Protection Level

**PME**—Primary Mission Equipment

**P-Sortie**—Pilot Proficiency Sortie

**RAP**—Ready Aircrew Program

**RCR**—Runway Condition Report

**RNAV**—Area Navigation  
**RNP**—Required Navigational Performance  
**ROE**—Rules of Engagement  
**RON**—Remain over Night  
**RVSM**—Reduced Vertical Separation Minimum Airspace  
**SCDL**—Surveillance Control Data Link  
**SD**—Senior Director  
**FE**—Flight Examiner  
**SO**—Surveillance Officer  
**SOF**—Supervisor of Flying  
**SPINS**—Special Instructions  
**SQ**—Squadron  
**SSM**—Senior Surveillance Manager  
**TAC (A)**—Tactical Air Control (Airborne)  
**TRT**—Takeoff Rated Thrust  
**UP**—Unqualified Pilot  
**US**—United States  
**USAF**—United States Air Force  
**VFR**—Visual Flight Rules  
**VMC**—Visual Meteorological Conditions

**ATTACHMENT 2**  
**E-8 PASSENGER BRIEFING GUIDE**

**A2.1.** Regulatory Guidance for Briefing Passengers is contained in AFI 11-2E-8, Volume 3 and AFI 11-202, Volume 3.

**A2.2.** General

- A2.2.1. AC's/MCC's name
- A2.2.2. Mission duration/ETA at destination
- A2.2.3. Cruise altitude
- A2.2.4. Weather en-route and at destination
- A2.2.5. Passenger on/off-load procedures
- A2.2.6. Ramp Safety (Danger areas/ hearing protection)
- A2.2.7. Communications connections and use

**A2.3.** Emergency Signals

- A2.3.1. Ground Evacuation
  - A2.3.1.1. Signal for evacuation
  - A2.3.1.2. Primary/Secondary exits
  - A2.3.1.3. Escape slides
  - A2.3.1.4. Assembly areas
- A2.3.2. Crash Landing/Ditching
  - A2.3.2.1. Signal for preparation
  - A2.3.2.2. Signal to brace for impact
- A2.3.3. Loss of Pressure
  - A2.3.3.1. Signal
  - A2.3.3.2. Oxygen requirements

**A2.4.** Oxygen / Survival Equipment

- A2.4.1. Assigned oxygen source—how to check / use system
- A2.4.2. LPUs—fitting and use (if applicable)
- A2.4.3. Walk around bottles (location, use, procedures)

**A2.5. Restrictions/Review T. O. Warnings**

- A2.5.1. Lavatory
- A2.5.2. Seat belts
- A2.5.3. Bunks

A2.5.4. Smoking / Tobacco products

A2.5.5. Electronic Devices

**A2.6. Galley Area**

A2.6.1. Restrictions during refueling

A2.6.2. Flight meals/ Oven Use

A2.6.3. Coffee & Water

A2.6.4. Noise protection

**A2.7. Miscellaneous**

A2.7.1. Follow E-8 crewmember instructions at all times

A2.7.2. Brief passengers on any emergency drills

A2.7.3. Transportation of Drugs

A2.7.4. FOD Hazards-passengers may wear rings and earrings.